EVALUATION OF CORAGEN® AS A TRANSPLANT WATER TREATMENT FOR CONTROL OF TOBACCO SPLITWORM IN FLUE-CURED TOBACCO

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Abstract:

The DUPONT™ product CORAGEN®, (chlorantraniliprole) was labeled for use to control insects in flue-cured tobacco production in the United States in 2010. Coragen is recommended for use on tobacco to control tobacco budworm (Heliothis virescens), tobacco hornworm (Manduca sexta) and tobacco splitworm (potato tuberworm) (Phthorimaea operculella). Research trials have been conducted in Georgia in 2010, 2011 and 2012 to evaluate the use of Coragen for control of a variety of worms which attack tobacco. Trials have demonstrated the effectiveness of Coragen applied with the water at transplanting for control of tobacco budworms, cutworms and most recently tobacco splitworms. Although populations of tobacco budworms and tobacco hornworms occur annually and require management by tobacco growers, the occurrence of cutworm and tobacco splitworm varies with the season. Cutworm and splitworm populations have recently been encountered in areas where trials have been conducted and valuable data have been accumulated on these insects as well. In this trial transplant water treatment with Coragen was found to give control of tobacco splitworm.

Introduction and Objective:

Although tobacco splitworm infests flue-cured tobacco in Georgia annually, the most significant infestation most often occurs in tobacco after the final cultivation and throughout harvesting. Occasionally early season infestation results in damage to the seedling bud similar to that of budworms. The objective of this study was to evaluate early season control of tobacco splitworm following transplant water application of Coragen systemic insecticide.

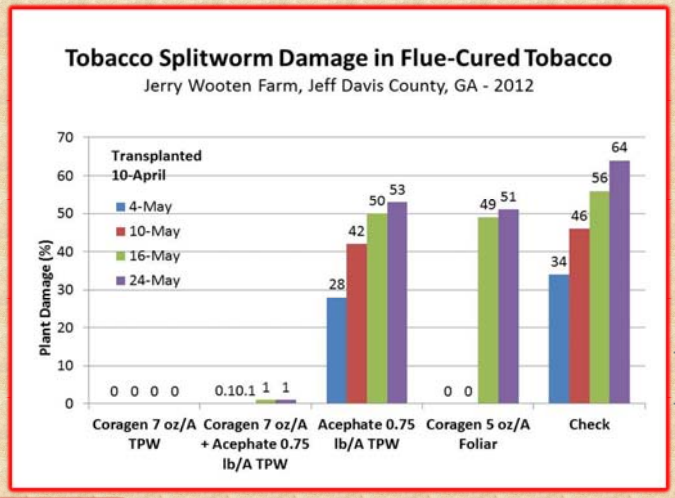
Materials and Methods:

On April 10, 2012, transplant water treatments consisting of 7 oz/A of Coragen, 7 oz/A of Coragen combined with 0.75 lb/A of Acephate 97, and 0.75 lb/A of Acephate 97 were applied in 115 gallons of water per acre in preparation of conducting a tobacco budworm control test. Following discovery of splitworm feeding one plot received a foliar application of 5 oz/A of Coragen with DyneAmic, a commercial sticker spreader. Another plot was left as a Non-Treated Check. Plots were 4 rows x 100 ft in length and consisted of 66 plants per row. Treatments were replicated four times in a Randomized Complete Block Design. Counts were taken from the center two rows to determine the percent of plants with splitworm feeding signs on 4 May, 10 May, 16 May and 24 May.

Results and Discussion:

Four weeks after transplanting tobacco splitworm infestation was noticed in the water only treatments. Treatments receiving Coragen were not infested. Splitworm feeding in the bud resulted in the loss of the bud and prolific sucker growth. These plants were stunted and yield and quality of the leaf was expected to be reduced. Coragen applied as a transplant water treatment successfully prevented tobacco splitworm infestation in the treated plants. Foliar application of Coragen and DyneAmic after observing active splitworm infestation was not successful in reducing the final splitworm infestation level. Acephate did not adequately reduce the population of splitworms. Tobacco splitworms were found to infest 64 percent of the plants in the Non-Treated Check plot.

Seedling infestation by splitworm.



Tobacco Splitworm (Potato Tuber Moth) Damage

Damage in the bud results in sucker growth.

Conclusions:

Although early season splitworm populations like those found on the Wooten Farm in 2012 are rare, this outbreak provided an opportunity to gather data which indicates excellent control of splitworms with the transplant water treatment of Coragen in addition to control of tobacco budworms, tobacco hornworm and cutworm.